The use of an online emotion awareness and regulation instrument in two university courses during the COVID-19 pandemic

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Contents

Keynote 1

Digital inequalities – what they are and their consequences

Professor Simeon Yates, University of Liverpool

The COVID-19 pandemic has highlighted for the public and policy makers the size and implications of digital inequalities in the UK and globally. The 'digital divide' is not a new idea. It has been explored since the 1970s as telecommunications, computing, ICT, or information "divides". More recently research has focused on digital exclusion and inclusion and the post pandemic buzz-words are digital and data poverty. This lecture will explore the nature of digital inequalities across access, skills, affordability and motivation. It will then examine and consider the implications of these inequalities. These implications cut across and are intertwined with citizens economic, social and cultural lives and opportunities. The talk builds on two decades of empirical research – both quantitative and qualitative – conducted in collaboration with regional, national and international stakeholders, charities and governments. The lecture will conclude with thoughts on the key next steps for research, practitioners and policy makers.

Biography:

Simeon is Associate Pro-Vice-Chancellor Research Environment and Postgraduate Research. His research on the social, political and cultural impacts of digital media includes a long-standing focus on digital media and interpersonal interaction. More recently, he has worked on projects that address issues of digital inclusion and exclusion. His prior work covered topics such as the use of digital technologies in the workplace, digital media use during crises and ICT use by the security services. Simeon has been researching the impacts of the internet and digital media on language and culture since 1990. His PhD thesis (1993) is a large-scale linguistic comparison of speech, writing and online interaction. Subsequent published work has covered analyses of gender differences in computer-mediated communication (CMC), gender and computer gaming, email and letter writing and science in the mass media. Simeon has written text books on social research methods — in particular, linguistic and discourse analytic methods.

Keynote 2

Communitizing Science: Communities as Contexts for STEM Learning

Associate Professor Tamara Clegg, University of Maryland

In this talk, Tammy will highlight the potential of hyperlocal community settings – neighborhoods, community centers, after school programs – for promoting STEM learning in everyday life. Highlighting findings from two studies, Science Everywhere and Data Everyday, Clegg will illustrate ways STEM learning can be connected to issues and topics relevant to community members' goals (e.g., cooking, sports). First, in Science Everywhere, with colleagues, Tammy has spent over six years designing, developing and situating a social media app, large community displays, and life-relevant science learning experiences for youth in two urban, resource-constrained neighborhood settings. From this project, she will highlight case studies of child and adult community members that illuminate the role of the Science Everywhere socio-technical system and hyperlocal context for influencing science disposition shifts in communities. Second, in the Data Everyday project, Clegg's research team is seeking to understand the opportunities for data literacy development within NCAA Division I sports. Drawing on an interview study with Division I athletes and athletics staff members across sports, she will highlight key tensions that reveal opportunities and challenges for situating data literacy development in the context of community context of elite athletics. Through these studies, Tammy will describe ways such community contexts can, over time, reshape community dispositions in ways that fuel dynamic new community-drive STEM learning experiences and broaden our conceptualizations of STEM learning.

Biography:

Tamara "Tammy" Clegg is an associate professor in the College of Information Studies at the University of Maryland. She co-directs the Youth eXperience (YX) Lab at the College of Information Studies, University of Maryland. Tammy's work focuses on designing technology (e.g., social media, mobile apps, e-textiles, community displays) to support life-relevant learning where learners, particularly those from underrepresented groups in science, engage in science in the context of achieving personally relevant goals. She seeks to understand ways such learning environments and technologies support scientific disposition development. Tammy's work is funded by the National Science Foundation, the Institute of Museum and Library Studies, and Google.

1. Are virtual visits an effective way of engaging learners?

David Conway, Christine Gardner and Janet Hughes

The Open University

Off campus visits have wide ranging benefits to students including reinforcing and expanding upon taught learning (Streule and Craig, 2016), improved ability to relate theory to practice (Claiborne et al., 2020) and enhancement of motivation (Hutson et al., 2011).

Mature students often choose distance learning (DL) due to its potential to fit around life priorities such as caring responsibilities (Rasheed, 2020). However, the reasons mature students often choose DL also act as motivational constraints which could prevent them from participating in extra-curricular activities (Roosmaa and Saar, 2006).

Advances in technology mean it is now possible to design and implement virtual insight visits for students which produce many of the same benefits as traditional insight visits.

The aim of this project was to investigate if a live virtual visit to Bletchley Park Museum using interactive onscreen technology effectively engages students and enhance their experience.

Over 100 students participated in the virtual visit, many of whom were identified as being in the lowest 50% of the index of multiple deprivation. A small number of participants completed a survey asking their perceptions of the virtual visit. Over half stated that they would normally find it difficult to visit Bletchley Park. All said they would participate in future virtual visits and that they would like to visit Bletchley Park Museum in person.

Initial results indicate that students are engaged by the concept of virtual visits and that they can widen participation in extra-curricular activities. Furthermore, virtual visits may be an alternative promotional strategy for museums to increase visitor numbers.

Keywords: virtual visit, field trips, museums, webcasts, distance learning, widening participation

2. Catalogue of new forms of teaching, learning and assessment in Computer Science in Edu 4.0 and related teachers' skills and competences

Bart Rienties[1], Rebecca Ferguson[1], Christothea Herodotou[1], Francisco Iniesto[1], Julia Sargent[1] and Igor Balaban[2]

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The overall aim of Teach4EDU is to enable the creation of an environment that supports implementation of new Education 4.0 learning and teaching approaches in Computer Science (CS). A systematic literature review was carried out, focusing on three research questions. RQ1: Which pedagogic approaches are used to support the teaching of CS?; RQ2: Which of these approaches align with Education 4.0?; RQ3: What skills and competences do HE educators require in order to align CS with Education 4.0? Our literature search identified 66 articles.

Perhaps surprisingly none of the articles explicitly mentions "Education 4.0". The most common Education 4.0 characteristic was "5) students will be exposed to more hands-on learning through field experience" (73%), followed by "9) students will become more independent in their own learning" (67%), "4) students will be exposed to more project-based learning" (61%). A cluster analysis indicated a three-cluster solution: 1) EDU 4.0 light (n = 18), 2) project-based/hands-on learning (n = 22), and 3) full EDU 4.0 (n = 26). In EDU 4.0 light studies teachers mostly focussed on more independent learning (61%), learning anytime anywhere (44%), and personalised learning (39%). The second cluster had a strong focus on project-based (86%) and hands-on learning (86%), with relatively limited focus on choice how to learn (5%), personalised learning (5%), and learning anytime anywhere (18%). The third and final cluster, full EDU 4.0, was strongly focussed on hands-on learning (100%), becoming more independent (96%), personalised learning (85%), learning anytime anywhere (77%) and choice how to learn (77%). Overall, while there are some engaging and diverse practices in CS and Education 4.0 in Europe, it seems that relative to other countries (e.g., USA) more work needs to be done. This is one of the aims of the TEACH4EDU project will address.

Keywords: computer science, systematic literature review, education 4.0, cluster analysis

3. Co-designing Resources Around E-assessments for African HE

Nashwa Ismail, Tim Coughlan, Denise Whitelock and Olivier Biard

The Open University

During June to August 2020 over 500 teachers and education professionals from across Africa took part in a supported pathway through the OpenLearn Take Your Teaching On-line Course offered in the Pathways for Learning project. Survey data suggested that e-assessment is the area that participants find the most problematic to design for in a digital environment and desired more understanding of this topic. A poll was conducted during the conclusion webinar and participants rated assessment as a key learning outcome for future courses. This project is therefore the next step in addressing this pressing need of ACDE members and African educators following an initial introduction to e-assessment concepts as part of the Pathways Tertiary Educator programme (supported in phase 1 Covid response). The current project brings together OU and members of the network created with ACDE in the Pathways project to co-design and co-develop practical teaching activities and curricula on e-assessment, deliver and test core components of a course, where possible using existing OER and webinars. The applied co-design approach of an e-assessment course in this project is a response to the practical challenges faced by leaders and innovators in African Higher Education Institutions as they rapidly respond to moving their Universities' teaching and learning online following the COVID-19 pandemic. This approach will directly identify and address immediate concerns and learning needs, and can then be used and adapted with HEIs world-wide as essential components in a programme of courses for a wider audience. It would be a springboard to the co-creation of an expanding range of courses at different levels (from free to paid) covering topics determined by participants.

Keywords: assessment, co-design, e-assessment, formative, summative, online

4. Designing Ethical Assessment

Shailey Minocha, Victoria Murphy and Eileen Scanlon

The Open University

The move to remote online examinations during the COVID-19 pandemic has led to the take-up of online examination proctoring systems. In this presentation, we will present a review of ethical issues and controversies around online proctoring. We will frame the problem of online proctoring in our current research programme of ethical use, design and evaluation of educational technologies.

Through a series of case studies and assessment strategies, we will discuss how assessment can be designed in an ethical manner, for promoting academic integrity, for reducing academic misconduct, and to discourage contract cheating and use of essay mills. We will highlight the ethical considerations and pedagogical advantages of designing 'authentic' assessment to replace more traditional or essay-based approaches. We will describe how educational technologies could become an essential part of an ethical assessment toolkit.

Keywords: assessment, authentic assessment, ethical edtech, online proctoring

5. Distance Learners establishing Social Presence on Twitter to build a Community of Inquiry

Olivia Kelly

The Open University

Twitter is an online Social Networking Service that allows users to 'tweet' out messages. As all tweets are public, hashtags and the search facility allow users to find people with similar interests. Distance learners often have less of a student identity and network and Twitter may allow students to 'meet' and build their own support network. My research aims to investigate how distance learners use Twitter including the networks they create, how the communication they take part in fits within a Community of Inquiry (CoI) model and the impact this communication has on feelings of identity and motivation.

The poster outlines my 3 RQs (given below) as well as giving details on my methodology, data collection and analysis methods:
1. What are the structural characteristics of OU student networks on Twitter? Tweet data to be analysed used Social Network Analysis.
2. What is the role of students' Social Presence in online community building on Twitter? Tweet data to be analysed using content analysis within the CoI framework.
3. How does this social presence impact on feelings of identity and motivation? Interview responses to be analysed using Voice Centred Relational Method (VCRM).
The benefits of this research include filling a gap in existing research into how distance learners use Twitter, the language used by students in tweets and the voluntary use of Twitter by students. The research is also beneficial due to the growing importance of Social Presence online and, in particular, as Covid restrictions lead to more distance learning and use of Social Media. HEIs need to know how students build support networks on Twitter and how best to interact and facilitate.

Keywords: Twitter, Social Presence, Community Of Inquiry, Openness In Education, Widening Access, Widening Participation

6. Equity Focused Digital Clinical Simulations for K-12 Computer Science Teacher Education: Exploring the detection and dynamic response to confusion

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In this talk we will share the progress and setbacks we experienced in seeking to model confusion based on audio recorded responses (and transcripts of audio) from simulations about equity focused problems of practice in K-12 computer science teaching. The aim of the presentation is to illustrate a chain of evidence (which ranges from null findings to significant results) that helped shape the direction of detecting and responding to confusion in equity-focused simulations. The coordination of multiple investigations has led to our current understanding with the first set of results focused on detection of confusion and the second set of results focused on responding to confusion. We first review and report results from four approaches explored to detect confusion: 1) transcripts of audio recordings, 2) prosodic features of audio files, 3) self-evaluation by participants, 4) and researcher coding. Second we report results focused on responding to confusion considering both how confusion related to moments where teachers would provide students with support as well as the potential for technology to provide dynamic support. This talk serves two purposes: First it illustrates interesting results related to equity-focused research and second it highlights the work coordinated by Garron Hillaire, a Leverhulme Scholar from the Open World Learning program at the Open University. The set of studies reported illustrate how his thesis work informed his current research trajectory.

Keywords: Simulation Based learning, AI, Audio Classification, Text Classification, Confusion, K-12 Computer Science Education, Teacher Education, Equity

7. Extending UTAUT toward acceptance of OERs in the context of higher education

Samia Almousa

University of Leeds and Princess Nourah Bint Abdulrahman University

Knowledge is arguably the most valuable asset one can have.Even when shared, its value does not get any less. In most cases, when you share your knowledge with someone, you do not risk losing anything, unlike when you share money or any other materialistic objects, such as food, property, and so forth.In fact, sharing knowledge is a win-win situation for both the sharer and the receiver.For the former,sharing knowledge with others is an opportunity to engage in discussions that may broaden their already existing knowledge. For the latter the newly gained knowledge is highly valuable and can be a tool to accomplish many things.

As an academic,after using Open Educational Resources (OER) with my students,I realised that by using OER, it is possible to make education more effective by providing every student with a personal,free, softcopy of the textbook for the subjects they study.However, in the Arab context, we suffer to find appropriate resources due to many reasons,the most important is language and different context.

Saudi Arabia has the National Transformation Program,which aims to improve all life aspects, including educational technology aspects,and realise the Saudi Vision 2030,led to the establishment of the National Centre for E-Learning.The centre plays the role of a supporter of e-learning for public and higher education. In 2018, this centre launched "SHMS" as an OERs platform for educational institutions.The platform is dedicated to connecting people and ideas for the enrichment of all communities and is committed to improving educational outcomes through sharing and collaboration. As the adoption of this platform is new in my country,it is vital to study OERs implementation in Higher Education (HE). Thus, this study aims to understand the academics' perceptions of the use of OERs, and determine how to mainstream OERs in HEIs.To achieve this, a mixed-methods approach for data collection was adopted through two stages, distributing questionnaires to the universities academics, as well as conducting semi-structured interviews with the academics and eLearning assistants.This presentation will report the findings of the first phase which was a questionnaire method used to evaluate the developed Unified Theory of Acceptance and Use of Technology model

Keywords: Technology adoption, OERs, UTAUT, SHMS

8. How COVID-19 Impacted Learning Experiences and the Development of Further Research: Meaningful Student Engagement in an Online Environment

Emily Coughlan

The Open University

As part of the Open and Inclusive Special Interest Group (O&I SIG) at the Open University (OU), the team held the first online student voice event. Attended by over 40 participants, it was extremely successful with insightful and enriching discussions amongst staff and students. The event included three interactive workshops. The main findings from the workshop: How COVID-19 Impacted Learning Experiences Students explained the difficulties they experienced during the pandemic including: trying to fit in study and looking after their family. Students described that they were shielding, that had a huge impact on them, students missed interaction with staff and students on a face-to-face basis. Significant issues noted by students were the cancellation of EMA's and the protocol for standardisation of marks and grades. Some felt this may have had a negative impact on their results and felt frustrated with this decision by the OU. Students explained that they had been told to defer as a go to option when asking for support, which for some, was less than satisfying and not the response they were hoping for.

Students discussed the nature of the everchanging environment, although it was frustrating, applauded the OU for its management of the situation. The online support pages were described as extremely useful and easily navigable. Overall, students expressed great satisfaction in student support including support put in place by the Student's Association, Tutor Support, and the Ethics Committee. Students expressed how useful the event was and how inclusive the online approach was, with further suggestions on making it even more inclusive which will be explored for future events.

It is of paramount importance to nurture this community and develop further opportunities for such engagement, perhaps looking for links between nations and engaging the community with specific interests with the aim of continuing the discussions. Further research is now in scoping stages to explore and identify phenomena in online student voice activities across different departments in the OU. It will explore staff and students' perceptions of online student voice activities. The quality, accessibility, engagement, and impact of the online student voice activity will be investigated.

Keywords: Impact, Learning, Student, Experiences, COVID-19, Disability, Accessibility, Student Voice, Event

9. Hyperlocal Learning Network La Campana-Altamira: Supporting digitally enhanced maker education for low resourced communities during a pandemic

Mark Gaved[1], Noé Abraham González-Nieto[2], Nicole Lotz[1], Lay-Wah Carolina Ching-Chiang[3], Alejandra Díaz de León[3], Juan Manuel Fernández-Cárdenas[3], Derek Jones[1] and Rafael Machado[4]

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Maker education seeks to educate, engage and empower learners through hands-on design and making activities in a social setting where experienced and novice participants interact and learn from each other. This presentation reports on a collaborative initiative between Open University researchers and Mexican academics and community activists to support maker learning and educational continuity for children and families in a marginalised neighbourhood in urban Mexico, while schools and makerspaces have been closed due to the covid-19 pandemic.
Low income communities' educational opportunities have been disproportionately affected by the pandemic: they cannot simply transfer their learning online, often due to lack of financial resources and poorer urban infrastructures, so alternative approaches have to be considered.
'Hyperlocal Learning Network La Campana-Altamira' has taken an innovative approach to overcoming these challenges, supporting socio-constructivist, creative, hands-on learning using hybrid physical/offline digital tools for families who are at home but geographically proximate to others, during lockdown.

The research team, including community activists, devised an educational programme, resourced with craft kits, offline networked hubs (Raspberry Pi computers) and smartphones to enable 11 families to engage with studio-like maker learning and share outcomes while maintaining social distancing. Families were guided through the activities and introduced to the tools by researchers and social service programme undergraduate students while minimising contact yet enabling local-but-remote interactions.

In this presentation we describe our approach, the challenges of carrying out community-based research as a transdisciplinary and internationally dispersed team during a pandemic, and our initial findings. We reflect on the challenges of taking a participatory action approach to research with a strong empowerment agenda, and our attempts to embrace a decolonial approach to computing (or technology supported learning) while managing practical constraints. We will conclude by setting the project into the wider context of related activities and considering future ambitions.

Keywords: maker education, socio-constructivist learning, Mexico, transformative learning

10. Implementing self-regulated learning strategies in online learning environments

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Theories and models of self-regulated learning (SRL) describe the strategies successful learners use. According to Zimmerman (2002) self-regulated learners "are proactive in their efforts to learn because they are aware of their strengths and limitations and because they are guided by personally set goals and task-related strategies… These learners monitor their behaviour in terms of their goals and self-reflect on their increasing effectiveness. This enhances their self-satisfaction and motivation to continue to improve their methods of learning" (p. 65).

Many courses are presented online due to the Covid-19 pandemic and it is important to help students develop SRL strategies. This study explores what kind of SRL takes place online and in what ways it differs from SRL in f2f environments. Our main data sources are reflective journals, Self-regulated Online Learning Questionnaire (SOL-Q) and participant interviews. The participants (N=12) are the pre-service teachers in level-3 'Material Development in Chemistry Teaching' course, in a Turkish university. The course introduces students to Web 2.0 tools that support chemistry teaching. Students select a tool and share their experience about the use and features of the tool with peers. Other activities in the course include weekly online reflective journals and a digital story developed to showcase the use of the tool as a final project. Participation in the research was entirely voluntary and students' contributions were not related to course performance.

The analysis of data from the Turkish version of SOL-Q and students' reflective journals are ongoing. Initial analyses indicate that for most students motivational factors (goal orientation and self-efficacy) play an important role in helping students to regulate their learning. Goal setting, planning and help seeking are observed in some students' journal entries. However, it was also clear that students do not automatically start considering metacognition and become aware of how they learn. We will be interviewing students to further support the findings. Students' enthusiasm and eagerness in using the self reflective journals indicate that SRL can be introduced to the online courses effectively.

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. Theory Into Practice, 41(2), 64-70.

Keywords: self-regulated learning, self-reflective journal, online learning environments

11. Language Learners' Characteristics and Behavioral Patterns in LMOOCs: The Case of Learn Turkish LMOOC

Hilal Seda Yildiz[1], Bart Rienties[2] and Tevfik Volkan Yuzer[3]

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In this two-stage exploratory research, we determined the characteristics of nearly 11,000 learners in a Turkish Language MOOC (LMOOC) and whether their engagement differs according to these characteristics, and also we unveiled which variables are caused these differences. The findings of this study can help researchers and designers to re-think learning design, learner support, and overall learner experience in LMOOCS.

Within the scope of the first study, we discovered learners' demographics (age, gender, employment status, education level), language-related skills (online course experience and Turkish language level), and online learning environment engagement (watching videos, participating in short exams and module activities). We conducted Exploratory Data Analysis (EDA) procedures for the exploration purpose then visualised the findings. One of the interesting results we achieved as a result of EDA is that more than half of the learners are Syrian citizens, and half of them are men living in Turkey. More than half of the learners are at the undergraduate and above educational level as well as their online learning experience and their prior level in the Turkish language are low. When we explored learners' engagement on grammar tutorials and drama videos investigated, we saw that the tutorials were preferred more, and also video and visual activities were preferred more than the activities with text and keyboard input.

In the second study, we investigated learner subgroups in terms of their demographics, language-related skills (and online learning environment engagement. At this stage, the TwoStep clustering algorithm was used to include all categorical and continuous variables in the analysis. As a result of the analysis, five different subgroups emerged. These groups are named as (I) the highest engagement and diversity, (II) low engagement and non-online learning, (III) online learner and high engagement, (IV) adult and professional, (V) young and student. A two-stage approach has been adopted to validate the cluster analysis results. After the validation phase, we saw that online course experience and education level are the variables with the highest discrimination rate. These two variables are followed by age, quiz attendance, additional activity attendance and the video watching frequency, respectively.

Keywords: Learning Analytics, Educational Data Mining, Cluster Analysis, Language MOOCs

12. Online work-based learning: a systematic review

Bart Rienties[1], Blazenka Divjak[2], Francisco Iniesto[1], Katarina Pažur Aničić[2], Mirza Zizak[2] and Iona Jivet[3]

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It is widely acknowledged that graduates need to develop skills and competences beyond theoretical knowledge nurtured within higher education curricula. In the last twenty years there has been a push to support undergraduates and post-graduates with work-integrated or work-based learning (WBL) opportunities in the form of apprenticeships, practice-based lab sessions, project-based learning, and hands-on learning activities. With COVID-19 there has been a push to support and provide these opportunities for skills development online.

In this systematic literature review as part of the EU-funded RAPIDE project, we will explore 1) how to design inclusive online WBL practices, and 2) how effective are these online WBL practice in terms of developing graduate skills. We conducted a review using Web of Science and Sciencedirect using the search terms ("online" OR "virtual" OR "remote" OR "distance") AND ("work-based learning" OR "WBL" or "work-integrated learning") AND "higher education" for the period 2016-2021. In total 264 unique articles were identified, which were manually analysed to identify appropriate fit. 41 articles were subsequently read in detail by the research team and subsequently double coded. The preliminary findings will be presented at CALRG.

Keywords: online work-based learning, systematic literature review, COVID-19

13. Open University Models: Towards Enhancing Inclusive, Equitable and Quality Higher Education in Kenya

Denise Whitelock, Rebecca Ferguson, Simon Cross, Andrew Law,

Fereshte Goshtasbpour, Olivier Biard

The Open University

The Kenya Vision 2030 provides the blueprint of Kenya's journey to meet the Sustainable Development Goals (SDGs). It aims to transform Kenya into an industrialising, middle-income country providing a high quality of life to all citizens by 2030. A major support to the Kenyan government to deliver its commitment under SDG4 is establishing the National Open University of Kenya (NOUK) to ensure inclusive, equitable and quality higher education for all.

This presentation reports on the Open University's work in progress (under the Skills for Prosperity Project) to co-develop a NOUK model Options Paper and a relevant roadmap for Kenya. It specifically discusses the type of challenges and problems a NOUK can address and outlines a range of Open University models that have successfully addressed the discussed challenges. The models include Open Entry Distance, Open Distance, Hybrid, Micro-credentials and Catalyst models. Additionally, the strength, weaknesses, opportunities, and threats related to each model will be briefly reviewed.

Keywords: Open University models, Open digital education, Equitable and inclusive Higher Education

14. OpenTEL: what are the lessons learnt from the pandemic?

Victoria Murphy, Eileen Scanlon, Francisco Iniesto and Shi Min Chua

The Open University

The move to introduce technology enhanced learning (TEL) is a trend that has been observed for decades. Following the disruption arising from Covid-19 pandemic, there has been a move to remote teaching in universities across the world. This move has generated put the transformation or digital revolution in the limelight in the media.TEL is of strategic importance to the conduct of teaching, learning and research in education internationally. TEL when combined with the growing benefits of open approaches to education leads to a potentially transformational means of learning. In this paper the authors introduce some examples of research projects from the Open University's OpenTEL research grouping. These examples highlight some of the work conducted relating to lifelong learning, open education, and science education supported by TEL during the pandemic. OpenTEL research has identified that Covid-19 has exposed the need to better provide institutional support for students who are facing stress and disruption in their studies; experiences of collaboration among higher educational institutions to share knowledge and experiences to better engage in the online pivot, and the possibilities (and limitations) for online tools to maintain existing research communities.

Keywords: Accessibility, Citizen Science, Distance Education, Lifelong Learning, MOOC, OER, Science Education, Self-regulated Learning, Technology Enhanced Learning, Workplace Learning

15. Post-pandemic Assessment at The Open University: Challenges and Ambitions

Maria Aristeidou, Klaus-Dieter Rossade and Simon Cross

The Open University

In the last year, all face-to-face assessment at Higher Education Institutions (HEIs) were suspended due to the Covid-19 pandemic, which led to physical restrictions and campus closures. As a result, HEIs had to react at speed to re-structure their assessment design, policies, and processes - and communicate these changes to academic staff and students. However, it is uncertain whether a short-term change in the use of new forms of assessment will persevere and result in longer-term systemic change. Challenges for HEIs include consideration of subject-specific issues, the need to secure access to technology and evaluate staff skills, ensure that assessment standards are met, and finally, gauge student expectations and personal circumstances. This conversation addressed urgent needs but also created success stories and opportunities for radical changes to become possible. The aim of this presentation is twofold. First, we will discuss assessment-related challenges and ambitions at The Open University (OU) during and beyond the Covid-19 pandemic. Second, we will present findings drawn from survey responses of 631 OU undergraduate students on their views about participating in online exams as a replacement to the common pre-Covid practice of taking face-to-face exams at local centres appointed by the university.

Keywords: Assessment, Covid-19, Online learning

16. Predicting drop-out in Toastmasters; scoping out the application of learning analytics to support professional education.

Selina Griffin

The Open University

After my first year of my EdD at the OU, I am keen to share some of the findings of my preliminary literature review on learning analytics and how such practices could be applied to alternative contexts.

The use of learning analytics to build predictive models identifying students who might be at risk of failing or dropping out of their studies is becoming more common (to different degrees) in higher education. In the realm of professional education, focussed on skills rather than knowledge-based education, the practice is still relatively unheard of. My research is based in the realm of Toastmasters International (TMI); a global public speaking organisation of over 300,000 Members. Members attend local Club meetings where they give speeches and take on roles in order to progress through the educational programme in public speaking and leadership skills. TMI have recently developed Pathways; a complete overhaul of their educational programme (largely unaltered in over 50 years) which also for the first time moves materials from paper-based to a Learning Management System (LMS). My research seeks to examine these developments and then look to the field of learning analytics to see whether such techniques could be adapted to the field of professional skills training, examining behaviour in the trace data to flag individuals at risk of dropping out of Toastmasters. For the first time in Toastmasters close to one-hundred-year history, Pathways creates a dataset whereby we can examine the behaviour and engagement of Members with the materials and look for early warning signs of disengagement.

Keywords: learning analytics, retention, public speaking, professional development

17. Researching the complete picture? Some methodological opportunities and challenges in using 360-degree video for research

Simon Cross

The Open University

Affordable consumer-level 360-degree video recording and VR headset viewers offers researchers a potential new tool for the study of the places where learning happens, the capture of a single point perspective on interactions, and the reflection on practice for training or scholarship. This in addition to significant potential as a teaching tool. 360-degree video does not require the researcher to decide where to point a camera beforehand but instead creates a full spherical record that can re-viewed, shared, and archived. This presentation will outline the potential methodological opportunities and challenges for research and professional reflection of this still nascent technology. For example, what is the potential for the delegated capture of events that researchers cannot attend in person due to travel restrictions or cost, improving inter-rater reliability, establishing a 'complete' record for reference in the field, use as a mediating artifact for stimulated recall or discussion, and for capturing perspectives of others. The presentation will conclude with a brief review of the best affordable omnidirectional cameras available at present and a look ahead.

Keywords: 360 degree video, SVVR, research methodology, covid19

18. Student support networks during lockdown

Victoria Murphy, Jo Buxton and Natalie Tegama

The Open University

This project explores how OU students used their networks for emotional and academic support during the COVID-19 related lockdown, focusing on what role the OU played in those networks. The project used mixed-methods social network analysis to compare the experiences of students. Initially, students were asked to complete a network map of both their academic and emotional support during lockdown. The students were then interviewed, using their network map as a prompt to discuss their experiences. Network analysis was used to visualise the networks of students and calculate descriptive statistics. Thematic analysis was used to highlight themes that spanned multiple students' experiences. In addition to gathering data on the student perspective, the project held focus groups with STEM ALs and OUSA.

Results show that students drew on OU contacts for academic support in several ways during lockdown. While the way that lockdown affected students varied greatly, ALs were mentioned by many participants as key forms of support. The student support team and discussion forums were also mentioned as ways in which students reached out when they had questions. During the focus group, OUSA members noted how proactive they had needed to be on discussion forums as students searched for information on the OU's current policies. Conversely, the OU initially appeared to play a minimal role in emotional support. However, the AL and OUSA focus groups highlighted the closely interrelated nature of academic and emotional support.

The results of this project show the important role that ALs played in providing both academic and emotional support. A common theme across interviews and focus groups was the need for clear, consistent, and transparent communications from the university to all parties. Discussion forums and social media are increasingly becoming avenues that students turn to for information during times of turmoil. The Open University benefited during lockdown from having a large group of dedicated ALs, but also from having active members of the community clarifying questions, such as OUSA. Higher educational institutes should create communication plans in preparation for future unexpected events.

Keywords: social network analysis, student support, mental health, mixed methods

19. Supporting online learners in the Global south: models of facilitation

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Research and evaluation evidence (Harley & Simiyu Barasa, 2012; Hodgkinson-Williams et al., 2017; Stutchbury & Woodward, 2016) suggests that OER need to be mediated for users. Since 2017, the Teacher Education in sub-Saharan Africa (TESSA) strategy has been to achieve this through the provision of free online courses. The network has developed and presented four courses to support teachers and teacher educators in the co-construction of knowledge about teaching and learning, in their setting. To date we have reached around 9000 learners. As with face-to-face learning, providing support for learners is important in ensuring success. This presentation will describe and analyse three models for facilitation, all of which have contributed to the success of the courses. It will draw on survey and interview data to demonstrate the impact of facilitation on participants and on the facilitators themselves.

In the first, an NGO in South Africa, Ntatasise, adopted 'TESSA Teaching Early Reading with African Storybook' as part of their training programme for Early Years practitioners. Drawing on data from the evaluation report and blog contributions from participants, we will show how local facilitators provided support to groups of practitioners studying together, in the same institution or district.

In the second, a series of online webinars was linked to two free courses. Evidence from the evaluation suggests that not only did the webinars support learners in completing the programme, but they modelled online teaching. Participants reported that having taken part in the webinars, they were able to emulate the pedagogy in their own online teaching.

In the third, a team of online facilitators worked together to support learners on two courses to support inclusive education. They developed a set of strategies that will be shared in the presentation and used discussion forums to create meaningful user-generated content which enhanced the courses.

Key emerging themes will be identified and linked to what is known about the challenges surrounding the uptake of OER in the Global south.

Keywords: TESSA, OER, online facilitation, social learning

20. Supporting teachers' adoption of learning analytics dashboards through design-based research: Insights from two institutions

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While teachers are considered as the key users of learning analytics (LA), best practice examples that involve teachers in the development of relevant LA interventions, (e.g. dashboards) remain limited. In this paper, we present insights from two on-going doctoral projects that seek to develop and implement teacher-facing LA dashboards using design-based approaches that involve teachers as co-designers. The first project is based at the Open University (OU) in the United Kingdom and is focused on the use of the Early Alert Indicators dashboard (EAI) that provides predictions about students' learning activities. The second project is at the University of Oslo in Norway, developing a teacher-facing dashboard (CADA) aimed at providing teachers with real-time insights about students' participation and discourse in online discussions. Based on experiences gained through qualitative analysis of user-experiences, observation reports, and eye-tracking, preliminary findings from both cases suggest promises and challenges. Teachers reported the usefulness of LA dashboards as valuable tools to support individualised-interventions, enhanced their existing teaching skills, and timely learning-design changes. The involvement of teachers in the design and co-design process was highlighted as useful in connecting dashboards and teachers' pedagogical intentions. However, it was evident across the two case studies that systematic use of LA dashboards by teachers remains problematic, with teachers using dashboards erroneously and having challenges to understand the visualisations. Moreover, ethical issues, and limited support from management were cited as key concerns. The two cases provide guidelines and implications for teachers, researchers and technology developers concerning advancing the use and development of LA dashboards.

Keywords: Learning analytics, dashboards, teachers' perspectives, design-based research

21. Testing and Learning Digital Assistants at the OU

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Building on a proof of concept case involving the use of Alexa (and demonstrated at the 2020 CALRG) the Test and Learn team have a staged vision of what the future for digital assistants at the OU could look like. Beginning with a "planning and baselining" phase, this has been an enormous data exercise; analysing the above 8 million of call transcripts, texts, emails and webchats that the OU receives. By performing a deep analysis of this dataset we can as a first step along this roadmap, determine the kinds of questions that students and enquirers ask that are large enough in volume but are user-blind in that they don't require the assistant to know who they are speaking to in order to provide the requested information. With this stage now completed there are huge possibilities for the OU to make the most of this technology to support enquirers, students and staff as part of a modern, digital university offering.

This session showcases some of the findings from the analysis work carried out and shows a road map of what we could explore in the future and our next steps for summer 2021.

Keywords: Artificial intelligence, Digital assistants, Student support, Data analysis, Natural language processing

22. The CPD2 Change Cycle: Enabling development for Online Higher Education

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The Covid-19 Pandemic has challenged Higher Education to change practices towards online provision requiring a huge shift in developing teachers, administrators and university management to understand these activities. The Institute of Educational Technology has a long history of providing academic development for the Open University in its 50 years as an international distance learning university. Key to our development practices to support change in crisis has been to use innovation, adaptability and a wholistic approach to professional development. In particular, the professional and personal development required to facilitate online learning is truly interdisciplinary and can be viewed both from a bottom-up, life-long learning or a top-down, learning organisation perspective. However, bottom-up innovation can suffer from poor sustainability and top-down strategies can have limited adaptation and relevance to contextual needs. This presentation provides a research-informed connection between these perspectives of change during crisis by pulling together the advances and research evaluations, often related to technology enhanced learning. These wholistic perspective reviews cross-disciplinary professional development activities that come from, or have relevance to, the Higher Education context. Through this work we have identified three key factors that are critical elements of professional development for developing online learning in a crisis: Context, Philosophy and Delivery (CPD). We have further identified, through connecting the individual and organisational level of change, a CPD2 cycle. This cycle can support effective implementation (from organisational to individual needs) and evaluation (from personal to contextual impacts) of professional development enablers and barriers. There is an evidenced account of delivery tools, methods and approaches that have been used within three CPD2 cycle case studies (online learning design and Tricky Topics, knowledge exchange and Evidence Cafés, and personalisation in online learning). The findings identify impacts from these professional development activities which are discussed with reference to 'squaring the CPD2 cycle' in crisis change situations (i.e. completing the impact evaluation side of the cycle). Finally, we conclude with insights for HE to help implement and advance their own philosophies and contexts for professional development to support developing online HE learning in a time of crisis.

Keywords: change management, professional development, sustainability, adaptability

23. The Open Essay Optimiser: automated feedback for students to improve writing

Professor Denise Whitelock and Chris Edwards

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The writing of essays and reports is the default form of assessment for many academic courses. A major reason for this is that writing is essential to the academic endeavour. There are also more prosaic reasons; relating to university systems, approaches to marking and sticking to what we know will work. Students tend to find they are expected to gradually learn how to write and improve on their writing with very little guidance except through the feedback on their assessments. This can be because it is viewed as a generic skill and teaching mostly focuses on the subject at hand. As students grapple jointly with the assessment question and with becoming adept within this particular form of expressing their answers, this form of writing can add to their anxiety. Students usually only receive feedback on their writing once their grade for an assignment is determined, not as they produce their work.

The Open Essay Optimiser is built on technology previously developed in collaboration between Institute of Educational Technology and Oxford University and was known as Open Essayist. The new, improved Open Essay Optimiser provides a platform in which students can, in complete privacy, upload and develop their essay or report whilst receiving immediate automated feedback; primarily on the coherence of their writing.

Through this presentation, we give an overview of this new tool and present early findings from the ongoing pilot study with students from the post graduate module, H817 Openness and innovation in e-learning.

Whitelock, D.; Twiner, A.; Richardson, J. T. E.; Field, D. and Pulman, S. (2018). What does a "good" essay look like? Rainbow diagrams representing essay quality. In: Technology Enhanced Assessment (TEA 2017). Communications in Computer and Information Science (Ras, E. and Guerrero Roldán, A. eds.), Springer, Cham, 829 pp. 1–12.

DOI: https://doi.org/10.1007/978-3-319-97807-9_1

Whitelock, Denise (2018). Advice for Action with Automatic Feedback Systems. In: Caballé, Santi and Conesa, Jordi eds. Software Data Engineering for Network eLearning Environments. Lecture Notes on Data Engineering and Communications Technologies, 11. Springer, pp. 139–160.

DOI: https://doi.org/10.1007/978-3-319-68318-8_7

Keywords: assessment, feedback, automated, AI

24. The use of an online emotion awareness and regulation instrument in two university courses during the COVID-19 pandemic

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This study aimed to explore the use of an online emotion awareness and regulation instrument in two university courses that had transitioned to online learning during the COVID-19 pandemic. In addition to collecting data about students' emotions and emotion regulation whilst studying online, this study also investigated the value and usefulness of the instrument for both students and academic teaching staff. Undergraduate students from the University of Bristol's School of Education completed a weekly emotion awareness and regulation instrument on five occasions. Data from the instrument was also summarised and provided to academic teaching staff at three separate time points (after week 1, 3, and 5). After the 5-week period, an online survey was completed by both students and academic teaching staff to assess their perspectives of either: completing the instrument (students); or receiving the summarised data about students emotions and emotion regulation (academic teaching staff). Findings revealed that: a) students experienced a range of pleasant and unpleasant emotions whilst studying online (feeling anxious, overwhelmed, and supported were most reported emotions); b) the course itself and the teaching staff were prominent sources of pleasant emotions, whilst the course and learning context were the main causes of unpleasant emotions; c) students planned to use a range of strategies to regulate their emotions, with 'thinking positively', 'talking to other students on the course', and 'creating a good plan' being most selected; and d) students' awareness of their own emotions and tutors' awareness of students' emotions was enhanced by completing the instrument or viewing the summarised data, respectively. This presentation will discuss these key findings and highlight important implications for educators.

Keywords: emotion, emotion awareness and regulation, online learning, COVID-19

25. What makes a citizen: co-producing inclusive citizen science with people with learning disabilities

Jessica Carr

The Open University

One of the oft-cited aims of citizen science is to involve non-scientists in scientific inquiry drawing on their collective community knowledge to inform scientific practices. The relative value of citizen science is still debated by some in the scientific community, however, who believe 'science is an unashamedly elitist activity' (Durodie, 2003). These contradictory ideas can create confusion around the identity of a citizen scientist. Can they be professionals? Are they only to be thought of as amateurs? Can they ever 'belong' within the 'elite'?

This paper will focus on the PhD work of Jessica Carr and will present the inclusive and creative methods used with a local learning-disabled self-advocacy group to co-produce an inclusive citizen science project. The commentary will present key aspects of the capacity building programme, looking at how the participants have approached the task of becoming citizen scientists and researchers. Currently, there is a distinct lack of research meaning how to engage this group in citizen science. The proposed paper aims to begin these conversations within the research community.

The proposed paper highlights the importance of engaging previously under-represented communities in science communication. Furthermore, the commentary will focus on the co-researchers of this study and their experience of citizen science. The readers of CTSP will be encouraged to broaden their participant base and consider their own practice and its inclusivity.

The example discussed in the proposed commentary is based in the UK at a local level within an Oxfordshire town.

Keywords: Citizen Science, Inclusive Research, Creative Methods, Learning Disabilities, Co-production